Division 9

SECTION 09200

SECURITY MESH

PART 1 - GENERAL

1.01 SUBMITTALS

A. Product data: Indicate product description, including compliance with specified requirements and installation requirements. Mark manufacturer's brochures to include only those products proposed for use.

B. Samples: Submit samples of materials (1'-0" square).

1.02 SUMMARY

A. Note that the security mesh shall be installed under Section 09250 - Gypsum Wallboard Systems. This Section includes the following types of installation of security mesh: All security ceilings as scheduled in architectural drawings, gypsum board faced over security mesh applied to metal framing and finished.

1.03 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in their original shipping flats, bearing the manufacturer's name, brand name and supplier's name.

B. Store materials inside, under cover and keep materials flat and dry, protected from mechanical damage by workmen. Do not bend during storage or allow creases to deform the flat mesh.

PART 2 - PRODUCTS

2.01 SECURITY MESH MANUFACTURERS

A. Subject to compliance with the Contract requirements, manufacturers offering products that may be incorporated into the work include, but are not limited to, the following:
   1. Alabama Metal Industries (AMICO)
   2. Metalex Corporation (Keene Products)

2.02 MATERIALS

A. Security Mesh is a flat galvanized metal product with an elongated, diamond pattern, open mesh.
   1. 1-1/2" maximum opening in the mesh.
   2. 16 gauge galvanized steel mesh.
   3. Weight is approximately 38 pounds per 100 square feet.

2.03 FABRICATION

A. General: Provide the manufacturer's standard fabrication means and methods. Protect or eliminate all sharp corners at the edges of each standard sheet of the mesh material.

PART 3 - EXECUTION

3.01 INSPECTION

A. Inspect each sheet of galvanized security mesh before installation for flatness, clean and rust free condition. Do not cut for fabricated lengths or install any warped or rusted barrier mesh.
   1. The flatness of the mesh is critical since gypsum board must be installed over the security mesh.
   2. Do not install materials with sharp edges.
   3. Do not install over uneven or mis-spaced metal framing.

3.02 INSTALLATION

A. Follow the manufacturer's written recommendations for installation over metal framing. The manufacturer's instructions shall apply specifically to areas where gypsum wallboard will be applied over the security mesh. Security mesh shall be installed under Section 09250 - Gypsum Wallboard Systems.

B. Cut the security mesh only as necessary to fit terminations and framing. Double supports at edges shall be provided under Section 09250. Coordinate the work with the gypsum wallboard subcontractor and the general contractor for sizes to be furnished.

C. Do not bridge building expansion and control joints with continuous security mesh. Stop the mesh on either side of the joint over independent metal furring and ceiling framing.

END OF SECTION

SECTION 09250

GYPSUM WALLBOARD SYSTEMS

PART 1 - GENERAL

1.01 SUBMITTALS

A. Product data: Indicate product description, including compliance with specified requirements and installation requirements. Mark manufacturer's brochures to include only those products proposed for use.

1.02 DELIVERY, STORAGE AND HANDLING

A. Storage:
   1. Stack wallboard so that long lengths are not over short lengths.
   2. Store adhesives in dry area, provide protection against freezing.
   3. Do not overload floor systems.

1.03 JOB CONDITIONS

A. Temperature: Install wallboard only after building is enclosed. In cold weather, maintain uniform temperature in 55° F. to 80° F. range for 24 hours before, during and after wallboard installation and finishing.

B. Ventilation:
   1. Provide ventilation during and following adhesive and joint treatment applications.
   2. Use temporary air circulators in enclosed areas lacking natural ventilation.
   3. Under slow drying conditions, allow additional drying time between coats of joint treatment.
   4. Protect installed materials from drafts during hot, dry weather.

1.04 QUALITY CRITERIA

A. Allowable tolerances:
   1. Deflection: Suspension system components, hangers and fastening devices supporting lighting fixtures, ceiling grilles and acoustical units shall have maximum deflection 1/360 of the span, tested in accordance with ASTM C635-86.
   2. Bow, camber and twist: Not exceeding tolerances established by ASTM C635.
   3. Variation from level in finished ceiling: ± 1/8" in 12'-0".

1.05 RELATED SECTIONS

A. Section 05400 - Lightgage Metal Framing, suspension system for security ceilings and soffits.

B. Section 09200 - Security Mesh

PART 2 - PRODUCTS

2.01 FRAMING MEMBERS

A. Standard metal studs: Meeting ASTM C645, 25 ga. electro-galvanized steel, 1-¼" minimum depth by widths and lengths indicated.

B. Wall runners: Galvanized steel, 1" deep minimum by widths to receive studs, same gauge as studs.

C. Structural studs: Electro-galvanized steel as specified in Section 05400, Lightgauge Metal Framing.

2.02 GYPSUM WALLBOARD

A. Regular board: Meeting ASTM C366, 5/8" thickness, tapered edges.

B. Moisture-Resistant: 5/8” thickness; locate in public and staff toilet rooms and as backing for ceramic tile wall finishes.

2.03 FASTENERS

A. Fasteners for metal framing:
   1. For attaching metal runners and furring channels to concrete and masonry surfaces: Powder actuated type capable of withstanding 193 lbs. single shear and 200 lbs. bearing force without exceeding allowable stress design of fastener or member being fastened.

B. Screws for wallboard application:
   1. For application of face layer of wallboard to metal framing with security mesh construction: 1-5/8" Type S, bugle head.

2.04 JOINT MATERIALS AND ADHESIVES

A. Joint tape: Meeting ASTM C475, perforated.

B. Joint compound: Meeting ASTM C475, vinyl base, ready-mixed tape embedment and topping compounds.

2.05 ACCESSORIES

A. Corner reinforcement: Galvanized steel with 1-¼" wide flanges.

B. Metal jamb, ceiling and casing trim: Manufacturer's standard "L" and ""U" shaped galvanized members with fine expanded mesh flanges providing protection and neat finished edges.

C. Ceiling hangers:
   1. Wire: Minimum eight ga. galvanized annealed steel wire.
   2. Rod: ¼" diameter, galvanized threaded cold drawn mild steel.

PART 3 - EXECUTION

3.01 FRAMING AND FURRING INSTALLATION

A. Wall Runners:
   1. Attach at walls with specified fasteners spaced at 0'-8" o.c. maximum.

3.02 CEILING SUSPENSION SYSTEMS

A. Install suspension in accordance with applicable portions of ASTM C636.

B. Provide complete suspension system including hangers, metal studs and channels per Section 05400 and attachments. Sizes, locations and spacings shall conform to wallboard manufacturer's product data.

C. Secure to concrete by wire-tying to cast-in-place hanger inserts. Coordinate placement of wire hangers or inserts with concrete work.

D. Secure to metal decking by wire-tying or hanger clips or slots. If slots are provided for metal decking which also acts as permanent formwork, install hangers before concrete is placed.

E. Space hangers at 4'-0" o.c., maximum in each direction.

F. Provide extra hangers within 6" of ends of main runners and to support light fixtures, ceiling diffusers and grilles, access panels and other items resting in or on ceilings. At control joints,

provide extra hangers to support discontinuous runners. Coordinate support framing with the work of other trades.

G. Locate hangers plumb in relation to main runners and to avoid contact with insulation covering ducts and pipes. Do not pass hangers through ducts; alter spacing of hangers or splay hangers to avoid ducts and other obstructions, but do not exceed maximum allowable ceiling areas to be supported by each hanger. Offset horizontal forces of splayed hangers by counter-splaying members. Splay wires no more than 5" in 4'-0" vertical drop.

H. Splice main runners and furring channels by overlapping, with flanges of channels interlocked, and wire tie each end of splice with not less than a double strand of 16 ga. wire.

3.03 SECURITY CEILING AND SOFFIT APPLICATION

A. Base layer:
   1. Security Ceilings: Provide security mesh secured with long dimension at right angle to lightgage metal framing.
   2. Fastening: Attach using wire ties at 8” O.C. maximum each way.

B. Face layer:
   1. Apply face layer at right angle to framing.
   2. Fastening: Attach wallboard using fasteners specified, at spacings required by manufacturer's product data.

3.04 JOINT TREATMENT

A. Taping or embedding joints:
   1. Apply compound in uniform layer to all joints and angles.
   2. Apply skim coat following tape embedment but not to function as fill or second coat.

B. Filling:
   1. Apply joint compound over embedding coat to cover tape.
   2. Do not apply fill coat on interior angles.
   3. Allow fill coat to dry prior to application of finish coat.

C. Finishing:
   1. Spread joint compound over and beyond fill coat on all joints.
   2. Apply finish coat to taped angles to cover tape and taping compound.
   3. Sand final application of compound to provide surface ready for decoration.

D. Filling and finishing depressions:
   1. Apply joint compound as first coat to fastener depressions. Apply at least two additional coats of compound after first coat is dry. Sand each coat.
   2. Leave filled and finished depressions level with plane of wallboard.

E. Finishing beads and trim:
   1. First fill coat: Apply joint compound to beads and trim. Dry compound prior to application of second fill coat.
   2. Second fill coat: Apply joint compound in same manner as first fill coat. Dry compound prior to application of finish coat.
   3. Finish coat: Apply joint compound to beads and trim. Feather finish coat from grounds to plane of surface. Sand finish coat to provide flat surface ready for decoration.

END OF SECTION

SECTION 09300

TILE WORK

PART 1 - GENERAL

1.01 RELATED SECTIONS

A. Section 03000 - Concrete and Cement Finish.

B. Section 07130 - Membrane Waterproofing.

C. Section 10800 - Toilet and Bath Accessories.

D. Division 15 - Plumbing: Drains.

1.02 SUBMITTALS

A. Shop drawings: Submit shop drawings for all special tile pattern work.

B. Product data: Submit manufacturer's printed product description and installation instructions for use of manufactured mortars, grouts and accessory products.

C. Samples: Submit the following:
1. 1'-0" by 1'-0" panel of each type and color tile selected, grouted as specified.
2. Samples of each trim shape.
3. Samples of each accessory.
4. 1'-0" length of threshold.

D. Master grade certificates: Indicate that materials conform to TCA 137.1. Certificates shall indicate grade, kind of tile, identification for tile packages and name and location of project. Tile manufacturer shall sign and issue certificates at time of shipping.

1.03 DELIVERY, STORAGE AND HANDLING

A. Tile cartons shall be grade-sealed by manufacturer in accordance with TCA 137.1 with grade seals unbroken. Manufactured mortars, adhesives and grouts shall bear hallmarks certifying compliance with specified standards.

1.04 JOB CONDITIONS

A. Environmental requirements:
1. Set and grout tile in Portland cement mortar and grout when ambient temperature is at least 50° F.
2. Comply with minimum temperature recommendations of manufacturers for setting and grouting materials in other than Portland cement mortar.

1.05 QUALITY CRITERIA

A. Industry standards: Tile Council of America, "Recommended Standard Specifications for Ceramic Tile", TCS 137.1 and "Handbook for Ceramic Tile Installation".

B. Allowable tolerances: finished work shall be plumb, level and true to line within ± ¼" in an undivided space and ± 1/16" maximum in a running foot.

PART 2 - PRODUCTS

2.01 TILE

A. Acceptable manufacturers (unglazed ceramic mosaic tile):
   1. American Olean Tile Co. (Wall and Floor Tile)
   2. Dal-Tile Corporation (Wall and Floor Tile)
   3. United States Ceramic Tile Co. (Wall and Floor Tile)
   4. Monarch Tile Manufacturing Co. (Wall and Floor Tile)

B. Unglazed ceramic mosaic tile:
   1. Meeting TCA 137.1, Section 5.1 Standard Grade.
      a. Walls: Plain
      b. Floors and Curbs: Slip Resistant
   2. Edges: Cushion.
   3. Colors: As selected by Owner from manufacturer's standard color.
   4. Nominal face size:
      a. 2"x2".
   5. Thickness: 1/4".
   6. Mounting: Factory mounted, permanent mesh, dot or net mounting with 1/16" wide joints.
   7. Trim shapes: Matching unglazed mosaic tile in color and size; for application specified. Include coved bullnose base, bullnose caps, beads and corner units, as required.

2.02 SETTING AND GROUTING MATERIALS

A. Portland cement mortar:
   1. Materials:
      a. Portland cement: Meeting ASTM C150, Type 1.
      b. Sand: Meeting ASTM C144, clean and graded.
      c. Hydrated lime: Meeting ASTM C206, or ASTM C207, Type S.
      d. Mortar bed reinforcement: Welded wire mesh meeting ASTM A185.
      e. Metal lath: Flat expanded lath, rust-resistant painted, minimum weight of 2.5 lbs./sq.yd.
      f. Waterproof cleavage membrane: ten mil thickness polyethylene sheeting.
   2. Proportions: Mix materials in accordance with specified standards, for applications indicated. Measure materials in containers of known volume.
   3. Colors: As selected by Owner from manufacturer's standard colors.

B. Dry-set mortar for setting floor tile: Presanded Portland cement and additives meeting ANSI A118.1 with Laticrete International, Inc. No. 4327 additive added to all mortar at proportions recommended by additive manufacturer.

C. Latex-Portland cement grout for wall tile:
   1. Acceptable products:
      a. H.B. Fuller Co., Latex Wall Grout.
      b. L&M Mfg. Inc., L&M Mastic Grout.
   2. Characteristics: Portland cement with latex additive.
   3. Colors: As selected by Owner from manufacturer's standard colors.

D Commercial Portland cement grout:
   1. Acceptable products:
      a. L&M Mfg., Inc., Acid-R-Grout.
      b. The Upco Co., Hydroment Joint Filler.
   2. Characteristics: Portland cement and adhesives, including color-fast mineral oxide pigments.

3. Colors: As selected by Owner from manufacturer's standard colors.

2.03 EXPANSION JOINT MATERIALS

A. Sealant: As specified in Sealants section.

B. Back-Up Material: Flexible, non-compressive foam type.

PART 3 - EXECUTION

3.01 INSPECTION

A. Conditions of surfaces to receive tile:
   1. Surfaces shall be firm, dry, clean and free of oily or waxy films.
   2. Grounds, anchors, plugs, hangers, bucks, electrical and mechanical work in or behind tile shall be installed prior to proceeding with tile work.

3.02 TILE INSTALLATION

A. Center tile in spaces with tiles of equal widths at opposite walls, with no tiles less than ½ tile wide.

B. Cut and drill tile and trim shapes without damage to exposed faces.

C. Joints in floor tile shall be perpendicular and parallel to walls. Locate expansion joints and accessories before tile is installed.

E. Space expansion joints through tile and setting bed at required spacing each direction.

F. Align joints in floor and base units.

G. Thresholds: Install using same method as specified for floor tile.

H. Edge strips: Install at door openings not having thresholds and at intersections of tile with other flooring materials where thresholds are not indicated.

I. Grind and fit tile at intersections, against trim and at built-in fixtures and accessories. Fit around outlets, pipes, fixtures and fittings so that plates, escutcheons and collars overlap cuts.

J. Install tile work in accordance with the following reference standards:
   1. Mortar set unglazed ceramic mosaic wall tile: TCA Handbook, ANSI A108.1C, System W221.
   2. Mortar set floor tile: TCA Handbook, ANSI A108.1C, System F-121.
   3. Shower receptors: TCA Handbook, System B414.

3.03 CLEANING AND PROTECTION

A. Clean tile as work progresses, preventing accumulation of setting and grouting materials or debris on tile faces.

B. Clean glazed tile and thresholds using a solution of detergent and water only. Use no acids to clean glazed tile and thresholds.

C. Allow tile work to cure a minimum of 14 days prior to acid cleaning.

D. Saturate grout joints with clean water at least two hours prior to beginning acid cleaning. Apply a grease coating to metal and vitreous surfaces subject to contact with acid solution. Remove grease coating at completion of cleaning operations.

E. Utilize a solution of one part muriatic acid to 15 parts clean water for cleaning. Work in areas not exceeding 20 sq. ft., scrubbing tile surfaces to remove residue. Do not scrub grout joints.

F. Flush cleaned areas with water immediately after cleaning. Scrub surfaces with clean water to remove remaining film.

G. Do not reused cleaning solutions. Discard solutions containing residue and debris from cleaning operations so as not to contaminate or stain adjacent work.

H. Protect installed tile work until Date of Substantial Completion by covering with kraft paper.

3.04 MAINTENANCE MATERIAL

A. Provide 10% additional tile of each type and color tile installed for Owner's maintenance use.

B. Store tile where directed by Owner’s Project Manager.

END OF SECTION

SECTION 09510

ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.01 SUBMITTALS

A. Shop drawings:
   1. Submit detailed shop drawings of construction details, at a scale of no less than 3" = 1'-0:, reflected ceiling plans at a scale of no less than 1/8" = 1'-0", and specified suspension systems.
   2. Indicate locations of lighting fixtures, grilles, and sprinkler heads; change in level details; and access panel dimensions and locations. Indicate framing and support details for any items and/orwork supported by the suspension system.

B. Samples: Submit the following:
   1. 1'-0" by 1'-0" samples of each type acoustical material specified. Samples shall show the full range of color and texture to be expected in the completed work and, upon approval, shall become the standard of quality for the work.
   2. 1'-0" length of each suspension member and molding.

C. Product data: Include product descriptions and installation instructions for each material.

D. Maintenance data: Submit manufacturer's recommendations for cleaning and refinishing each type of acoustical material used. Include precautions against materials and methods which may be detrimental to finishes and acoustical efficiency.

E. Certificates: Indicate compliance with specified requirements, including Underwriters' Laboratories, Inc. (UL) fire-resistive ratings.

1.02 DELIVERY, STORAGE AND HANDLING

A. Deliver acoustical units in manufacturer's original unopened cartons, fully identified by type, finish, performance data and compliance labels.

B. Handle, store ad protect in accordance with manufacturer's recommendations.

1.03 QUALITY CRITERIA

A. Allowable tolerances:
   1. Deflection: Suspension system components, hangers and fastening devices supporting lighting fixtures, ceiling grilles and acoustical units shall have maximum deflection of 1/360 of the span, tested in accordance with ASTM C635.
   2. Bow, camber and twist: Not exceeding tolerances established by ASTM C635.

B. Installer's qualifications: Installer shall be approved by material manufacturers and have at least five (5) years experience in the installation of the specified products.

1.04 JOB CONDITIONS

A. Environmental requirements:
   1. Maintain humidity in 65% to 75% range in areas where acoustical materials are to be installed 24 hours before, during and 24 hours after installation.
   2. Maintain uniform temperature in the range of 55° F. to 80° F. for at least 48 hours prior to installation and after installation until Date of Substantial Completion.

B. Sequencing and scheduling:
   1. Schedule acoustical material installation to minimize need for removal and replacement of acoustical units to accommodate work of other trades.

C. Coordination: Coordinate with the mechanical and electrical trades to locate all items to be installed in acoustical ceiling system, and do not permit installation of any work which will penetrate acoustical ceilings or affect designated ceiling heights until layouts and all questions are resolved.

D. Protect completed work above ceiling system from damage during installation of ceiling suspension system.

1.05 WARRANTY

A. Acoustical tile manufacturer shall provide a 10-year limited warranty of dimensional stability against warping, buckling, sagging or delamination.

PART 2 - PRODUCTS

2.01 CEILING SUSPENSION SYSTEMS

A. Acceptable manufacturers:
   1. Chicago Metallic Corp.
   2. Donn Products, Inc.
   3. National Rolling Mills Co.
   4. Roper Eastern Building Systems.
   5. Armstrong World Industries, Inc.

B. Exposed grid system:
   1. Structural classification: Meeting ASTM C635, Heavy Duty.
   2 Module:
      a. 2'-0" by 2'-0"
   3. Main and cross tees:
      a. Tee material: Galvanized, cold-rolled steel.
      b. Cap material: Steel.
      c. Design: Single web.
      d. Tee size: 15/16" flange width; 1-½" height main tees, 1" height cross tees.
   4. Edge molding: Edge molding shall be manufacturer’s standard “L”.
   5. Finish on exposed components: Factory-applied, low-gloss white paint.

C. Accessories:
   1. Hanger wire: Minimum 12 ga. galvanized, soft-annealed, mild steel wire.
   2. Wall molding: Angle shape, exposed face surface finished to match suspension system components.
   3. Molding attaching clip: Friction-fit clip to attach cross tees and main tees to wall molding.
   4. Partition attachment clip:; Snap-fit clip, prefinished to match suspension system components.
   5. Hold down clips: Suspension system manufacturer's standard design.
   6. Hanger rod: ¼" diameter, threaded galvanized steel rod.

2.02 ACOUSTICAL CEILING TILE

A. Acceptable products:

1. Armstrong World Industries, Inc.: Fine Fissured.
2. Equivalent products as approved by Owner's Project Manager

B. Characteristics:
1. Product Number: 1831M
2. Size:
3. 2'-0" by 2'-0"
4. Thickness: 5/8".
5. Edges: Square Lay-in.
6. Finish: Factory-applied washable, white vinyl latex paint.
7. NRC: .60 minimum in accordance with ASTM C423.
8. Fire resistive rating: Class A.

2.03 ACCESSORIES

A. Acoustical sealant: Non-hardening, non-bleeding, water-base type.

PART 3 - EXECUTION

3.01 SEISMIC DESIGN REQUIREMENTS

(IBC Seismic Use Group III)
Provide an unrestrained ceiling system that will accommodate the movement of the structure during a seismic event. The objective is to have a free-floating ceiling that meets the seismic design requirements for the Bozeman, Montana seismic zone and building use as defined in the applicable provisions of the International Building Code.

3.02 SUSPENSION SYSTEM INSTALLATION

A. Install suspension system in accordance with applicable portions of ASTM C636, the manufacturer's recommendations, and approved shop drawings.

B. Field measure entire ceiling area and established layout of acoustical units to balance border widths units to balance border widths at opposite ends of each ceiling. Avoid the use of less-than-half width units at borders and comply with reflected ceiling plans.

C. Hangers: Provide hangers as required, complying with manufacturer's requirements for a fully-supported ceiling system.

3.03 ACOUSTICAL UNIT INSTALLATION

A. Install acoustical units in level plane and straight line courses within allowable tolerances.

B. Place materials to bear all around on suspension members.

C. Pattern shall be symmetrical about centerline of area, unless otherwise indicated. Lay out units having directional pattern in same direction.

D. Seal joints in acoustical units around pipes, ducts, and ducts and electrical outlets with acoustical sealant.

E. Where cutting of acoustical units is required, cut so that no cut or damaged edges are visible in finished work.

F. Hold-down clips:
   1. Install acoustical units surrounding recessed troffer lights with hold-down clips to prevent movement or displacement of units.
   2. Install hold-down clips at exterior ceiling panels and fire-resistive panels.

3.04 CLEANING

A. Clean soiled or discolored unit surfaces after installation.

B. Touch up scratches, abrasions, voids and other defects in painted metal surfaces.

C. Remove and replace damaged and stained acoustical units with new units.

END OF SECTION

SECTION 09650

RESILIENT FLOORING

PART 1 - GENERAL

1.01 SUBMITTALS

A. Submittals
   1. Samples: Submit full size samples for each type, color and pattern of flooring and accessories required.
   2. Product data: Indicate product characteristics and installation requirements, including manufacturer's recommended adhesives and maintenance instructions.

1.02 JOB CONDITIONS

A. Environmental requirements:
   1. Maintain temperature in spaces to receive resilient materials above 70 F. for not less than 24 hours before and 48 hours after installation.
   2. Maintain minimum temperature of 55 F. after flooring is installed, except as specified above, for duration of project.

B. Protection: Protect finish flooring, base and accessories from staining, marring or other physical damage by work of other trades. Cover or mask surfaces as required.

PART 2 - PRODUCTS

2.01 VINYL COMPOSITION TILE

A. Acceptable product (or equal):
   1. Armstrong World Industries, Inc.
   2. Type: Stonetex.
   3. Size: 1'-0" by 1'-0" face size by 1/8" thickness.
   4. Color: As selected by Owner’s Project Manager from manufacturer's standard colors.

2.02 BASE MATERIALS

A. Rubber base:
   1. Acceptable manufacturer: Mercer Plastics, Inc. or equal:
   2. Height: 4".
   3. Style: Coved.
   4. Corners: Preformed inside and outside corners.
   5. Colors: As selected by Owner’s Project Manager from manufacturer's standard colors.

2.03 APPLICATION MATERIALS

A. Adhesives: Types and brands recommended by base and flooring material manufacturer's product data for installation conditions indicated. Design-Builder shall verify which curing compounds were used on concrete slab and select a compatible adhesive as recommended by floor manufacturer.

B. Primer: Type and brand recommended by floor covering manufacturer's product data.

C. Wax and cleaner: Types recommended by floor covering manufacturer's product data for particular type of flooring material.

PART 3 - EXECUTION

3.01 PREPARATION

A. Remove dirt, oil, grease or other foreign matter from surfaces to receive base, floor covering or accessories.

B. Inspection of floor surfaces to receive tile shall be performed by the tile installer and the manufacturer's representative who will notify the Design-Builder in writing of defects so that they may be corrected before this work is begun. Proceeding with this work shall constitute acceptance and assumption of responsibility by the tile installer of the floor surfaces.

C.

3.02 APPLICATION OF ADHESIVES

A. Mix and apply adhesives in accordance with manufacturer's product data. Apply as recommended by adhesive manufacturer.

B. Provide safety precautions during mixing and applications as recommended by adhesive manufacturer.

C. Apply adhesive to only that area which can be covered by resilient material within the recommended working time of the adhesive.

3.03 TILE INSTALLATION

A. Installation
   1. Lay tile beginning at center of room or space, working toward perimeter.
   2. Fit flooring material into breaks and recesses, against bases, around pipes and penetrations, under saddles or thresholds and around permanent cabinets and equipment.
   3. Lay tile with grain or pattern running in same direction between adjacent tile.

3.04 BASE INSTALLATION

A. Workmanship:
   1. Unroll base material and allow to acclimatize for 24 hours minimum. Cut into lengths for minimum number of joints.
   2. Install with tight butt joints with no joint widths greater than 1/64".

B. Top-set base:
   1. Apply adhesive and adhere to vertical surfaces.
   2. Form internal and external corners using pre-molded corners. Base joints on internal and external corners will not be allowed.
   3. Scribe base to abutting materials.

3.05 ACCESSORY INSTALLATION

A. Resilient thresholds and reducers:
   1. Apply adhesives and bond to substrate.
   2. Center thresholds and reducers in door openings.
   3. Fit edge to door frame jambs without visible gaps or cracks.
   4. Fit edges to abutting floor materials for flush fit.

3.06 CLEANING: Just prior to Date of Substantial Completion, clean surfaces using a neutral cleaner acceptable to material manufacturer. Remove debris and misplaced adhesives. Apply two coats of non-slip wax to clean floor surfaces and buff.

3.07 MAINTENANCE MATERIAL: Furnish additional floor tile of each color and pattern of tile as maintenance material. Furnish at the rate of one carton for each 1000 sq.ft. of floor surface, or fraction thereof.

END OF SECTION

SECTION 09900

PAINTING

PART 1 - GENERAL

1.01 SUBMITTALS

A. Product data:
   1. Submit complete list of products proposed for use to Owner's Project Manager at least 30 days prior to commencement of painting work.
   2. Indicate manufacturer, brand name, quality and type paint for each surface to be finished.
   3. Intent of Design-Builder to use products specified does not relieve him from responsibility of submitting product list.

B. Color samples: Submit two sets of recommended color samples from paint manufacturers standard color, for color selection by Owner.

C. Brush-outs:
   1. Following issuance of final color schedule, prepare actual brush-outs for each paint, stain or finish specified; submit brush-outs in duplicate, minimum size of 120 sq. in.
   2. Apply products in number of coats specified for actual work.

1.02 DELIVERY, STORAGE AND HANDLING

A. Delivery:
   1. Deliver materials to protect site ready-mixed in original containers with labels intact.
   2. Provide labels bearing manufacturer's name, paint type, color and recommended installation and reducing procedures.

B. Storage and handling:
   1. Maintain neat, clean conditions in storage area; remove rags and waste materials at end of each day's work.
   2. Close containers at end of day's work. Leave no materials open.

1.03 JOB CONDITIONS

A. Environmental requirements:
   1. Comply with manufacturer's recommendations regarding environmental conditions under which materials may be applied.
   2. Apply no materials in spaces where dust is being generated.

B. Protection: Cover finished work of other trades, prefinished items and surfaces not being painted concurrently.

C. Safety precautions:
   1. Provide temporary fire protection equipment in materials storage area.
   2. Prohibit smoking in storage area.

D. Fire Retardant Paint: (Detention Areas Only)
   1. Flame spread to a classification value of twenty five or less and has a smoke developed rating not exceeding four hundred fifty.

PART 2 - PRODUCTS

2.01 PAINTING MATERIALS

A. Acceptable manufacturers: Except as otherwise noted, products specified as a standard of quality and color are manufactured by PPG Industries. Products of the following

manufacturers same in type, quality and color are acceptable for use, subject to approved product list.

1. Devoe and Raynolds Co., Inc.
2. Glidden-Durkee Corp.
3. PPG Industries.
4. Pratt & Lambert, Inc.
5. Sanders - Porter Paints
6. Duron, Inc.
7. Tnemec Company, Inc.
8. Sherwin-Williams Co.
9. Rose-Talbert Paints

B. Where products other than those of the manufacturer listed as the standard quality are specified in the Painting Schedule, such products have been selected to achieve specific results and substitutions will be allowed only in accordance with Materials and Equipment section.

C. Miscellaneous materials:
   1. Paint thinners and tints shall be products of same manufacturer as paints or approved by manufacturer for use with his products.
   2. Shellac, turpentine, patching compounds and similar materials required for execution of work shall be pure, best quality products.

PART 3 - EXECUTION

3.01 PREPARATION

A. Surfaces to receive finishes shall be free of debris, oils, dust or other deleterious materials.

B. Lumber, plywood and veneered wood surfaces: Prepare as required by finish manufacturer for quality work and in accordance with good practices.

C. Gypsum wallboard: Prepare as required by finish manufacturer for quality work and in accordance with good practices.

D. Concrete:
   1. Concrete shall cure a minimum of twenty eight days prior to painting.
   2. Fill cracks, holes and irregularities with cement grout.
   3. Remove laitance, oil, grease, dirt and debris from surfaces. Allow concrete to cure prior to paint application.

E. Concrete unit masonry: Rub to remove loose mortar and debris. Fill irregularities with cement grout.

F. Galvanized metals: Wash with xylol to remove grease, oil and contaminants. Wipe dry with clean cloth.

G. Aluminum:
   1. Sand or scrape to remove oxides.
   2. Wash with xylol to remove grease, oil and contaminants. Wipe dry with clean cloth.

H. Ferrous metals:
   1. Wire brush or sandpaper to remove rust and mill scale.
   2. Solvent clean with xylol to remove grease, oil and contaminants. Wipe dry with a clean cloth.

I. Wood Doors:
   1. Do not use steel wool or water base finishes on fire doors.
   2. Before finishing wood doors thoroughly sand all surfaces. Sanding and finishing should be done with door in a horizontal position.

3.02 APPLICATION

A. General:
1. Apply paint, sealers and spackles only when moisture content of surfaces is 12% or less for interior wood and 15% or less for exterior wood.
2. Apply paint materials using clean brushes, rollers or spraying equipment.
3. Apply materials at rate stated by paint manufacturer for type surface being painted.
4. Comply with manufacturer's recommendations for drying time between coats.
5. Finish coats shall be smooth, free of brush marks, streaks, laps or pileup of paint.
6. Refinish damaged or unacceptable drywall.
7. Backprime finish carpentry with material specified for prime coat.
8. Paint inside of ductwork flat black for entire area visible through ceiling openings. Paint underside of ductwork and other above-ceiling items visible through ceiling openings flat black.
9. Finish all edges of doors same as faces.
10. Paint exposed pipes and ductwork in occupied areas same as adjacent wall surfaces.
11. Unless otherwise indicated, all electrical and mechanical roof top items, whether exposed or not, shall be finished.
12. The quantity of coats listed in the Painting Schedule are the minimum. Design-Builder is responsible for application of any additional coats necessary to achieve required coverage and color uniformity.
13. Corridor partitions, smoke partitions, exit enclosures and fire walls shall be effectively and permanently identified with stenciling in a manner acceptable to the authority having jurisdiction and SPPC 504.7.2.

3.03 PAINTING SCHEDULE

A. The intent of this Section is that all materials specified or shown in this project, except those included in "B" below, shall be painted. As an example painted metals shall include, but shall not be limited to metal fabrications, exposed structural steel, sheet metal, roof hatches, hollow metal, roll-up doors, metal deck, steel stairs, mechanical items and electrical items.

B. Surfaces not requiring painting:
1. Prefinished surfaces and items except as follows:
   a. Fire hose cabinets and fire extinguisher cabinets specified to receive prime finish shall be painted regardless of the finish actually provided.
2. Concealed ductwork, conduit and piping.

C. Where a prime coat is specified under other Sections of these Specifications, only the finish coats will be required under this Section.

D. Exterior Surfaces:
1. Ferrous Metals
   a. Surface Prep: SSPC-SP3 Power Tool Cleaning
   b. Paint: Primer touch-up, one (1) coat enamel primer and two (2) coats gloss alkyd enamel.

2. Galvanized Metal – (Steel overhead doors, steel swing doors and frames, pipe railings, steel pipe guards, steel ladders, mechanical equipment):
   a. Surface Prep: SSPC-SP1 Solvent Cleaning
   b. Paint: One (1) coat galvanized metal primer and two (2) coats gloss alkyd enamel.

3. Aluminum
   a. Surface Prep: SSPC-SP1 Solvent Cleaning
   b. Paint: One (1) coat industrial enamel primer and two (2) coats gloss alkyd enamel

4. Concrete: Painted – Smooth Modified Epoxy Flat:
   a. Surface Prep: Clean and Dry
   b. Paint: One (1) coat exterior acrylic elastomeric masonry coating

5. Vent Stacks – To 325 degrees temperature (Gas Unit Heater Stacks):
   a. Surface Prep: SSPC-SP10 near White Blast Cleaning
   b. Paint: Two (2) coats PPG Speedhide Int/Ext Heat Resistant Coating 6-220.

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6. Vent Stacks – 325 to 700 degrees:
   a. Surface Prep: SSPC-SP10 near White Blast Cleaning
   b. Paint: One (1) coat inorganic zinc rich primer and one (1) coat PPG Speedhide Int/Ext Heat Resistant Coating 6-220.

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E. Interior Surfaces:
1. Wood: Painted – Alkyd Semi-Gloss (wood trim, wood shelving , wood doors and frames, cabinets): One (1) coat enamel undercoat and two (2) coats eggshell alkyd enamel.

2. Concrete Block – (Also see Item 9):
   a. Surface Prep: Clean and Dry
   b. Paint: One (1) coat latex block filler and two (2) coats flat latex or two (2) coats epoxy resin (kitchen, showers, toilets and other wet areas)

3. Concrete (Painted):
   a. Paint: Two (2) coats flat latex or two (2) coats epoxy resin (kitchen, showers, toilets and other wet areas)

4. Gypsum Drywall:
   a. Surface Prep: Clean and Dry
   b. Paint: One (1) coat latex primer sealer and two (2) coats flat latex

5. Steel: Ferrous Metal
   a. Surface Prep: SSPC-SP3 Power Tool Cleaning
   b. Paint: Primer touch-up, one (1) coat alkyd enamel primer and two (2) coats semi-gloss alkyd enamel

6. Galvanized Metal – Alkyd Semi-Gloss:
   a. Surface Prep: SSPC-SP1 Solvent Cleaning
   b. Paint: One (1) coat galvanized metal primer and tow (2) coats alkyd enamel

7. Aluminum: Painted – Alkyd Semi-Gloss:
   a. Surface Prep: SSPC-SP1 Solvent Cleaning
   b. Paint: One (1) coat industrial enamel primer and two (2) coats semi-gloss alkyd enamel.

8. Exposed Steel Joists and Metal Deck:
   a. Surface Prep: SSPC-SP3 Power Tool Cleaning to steel and SSPC-SPC1 to galvanized deck
   b. Paint: Shop primed and one (1) coat PPG Speedhide Super Tech MG Epoxy Ester Dry-Fog 6-157

9. Concrete Block – Epoxy Semi-Gloss:
   a. Surface Prep: Clean and Dry
   b. Paint: One (1) coat cementitious waterproofing block filler and two (2) coats high build semi-gloss olyamide epoxy coating

10. Concrete Floor – Sealed
    a. Surface Prep: Clean and Dry
    b. Paint: Two (2) coats waterborne interior clear epoxy floor coating

11. Concrete Ceiling:
    a. Surface Prep: Clean and Dry
    b. Paint: One (1) coat cementitious waterproof block filler and two (2) coats semi- gloss epoxy coating.

END OF SECTION